

ALBR:0067
99AB139

ABSTRACT OF THE DISCLOSURE

A circuit is provided for rectifying and amplifying an AC input waveform to optimize the dynamic range of downstream circuitry, such as an analog-to-digital converter. The circuitry includes an inverting amplifier and a non-inverting amplifier. The inverting amplifier includes a selectable resistance network in a feedback loop that permits the gain to be adjusted by appropriate selection of conductive states of solid state switches. The non-inverting amplifier includes a selectable resistance network on an input line. A control circuit, such as a microprocessor, monitors the output of the A/D converter and controls the conductive state of switches in the feedback and input networks to maintain the digital output within a desired portion of the dynamic range of the A/D converter. Several discrete gains may be provided and programmed in accordance with a predetermined selection scheme.